

T. Vogel.—Descriptions of new and little-known *Cacti*. By F. A. W. Miquel.—Some remarks on *Cassia obovata* and *C. obtusata*, Hayne. By Prof. Wenderoth.—On the rise of sap in plants. By Fr. Kützing.—Contributions to Meyer's *Chloris Hanoverana*. By Thilo Irmisch.—Query concerning *Epilobium denticulatum*. By Prof. Wenderoth.—On the *Hedysarea* of Brazil. By Dr. I. R. Th. Vogel.—An invitation to botanists to support the expedition of Schimper into Abyssinia. By Prof. Hochstetter and Dr. Steudel.

## PROCEEDINGS OF LEARNED SOCIETIES.

### ROYAL SOCIETY.

May 31.—A paper was read, entitled, "An Experimental Inquiry into the influence of Nitrogen on the Growth of Plants." By Robert Rigg, Esq. Communicated by the Rev. J. B. Reade, M.A., F.R.S., &c.

The author, after briefly alluding to a former paper laid before the Royal Society, describing the chemical changes which occur during the germination of seeds, and some of the decompositions of vegetable matter, proceeds, in the present paper, to trace a connexion between the phenomena exhibited during the growth of plants, and the direct agency of nitrogen. The experiments by which the author supports his views are arranged in separate tables, so drawn out as to indicate not only the quantities of carbon, oxygen, hydrogen, nitrogen, and residual matter, in about 120 different vegetable substances, but also the quantity of nitrogen in each compound, when compared with 1000 parts by weight of carbon in the same substance. The most important of these tables are those which exhibit the chemical constitution of the germs, cotyledons and rootlets of seeds; the elements of the roots and trunks of trees, and the characters of the various parts of plants, especially of the leaves, at different periods of their growth. From this extensive series, which is stated to form but a small portion of the experiments made by the author in this department of chemical research, it appears that nitrogen and residual matter are invariably the most abundant in those parts of plants which perform the most important offices in vegetable physiology; and hence the author is disposed to infer, that nitrogen (being the element which more than any other is permanent in its character) when coupled with residual matter, is the moving agent, acting under the living principle of the plant, and moulding into shape the other elements. The method of ultimate analysis adopted by the author, enables him, as he conceives, to de-

tect very minute errors, and therefore to speak with certainty as to the accuracy and value of every experiment\*.

LINNÆAN SOCIETY.

June 5.—Mr. Forster, V.P., in the Chair.

Read observations on the *Spongilla fluviatilis*. By John Hogg, Esq., M.A., F.L.S.

Mr. Hogg is disposed to adopt the opinion of Dr. Johnston of Berwick in referring the sponges to the vegetable kingdom. The lenticular bodies, which occur abundantly in specimens of the river sponge, and which some naturalists, and among others Lamarck, have regarded as the ovaria of the *Cristatella vagans*, Mr. Hogg inclines to consider as the sporules or reproductive bodies of the *Spongilla fluviatilis*. These seed-like bodies occur principally in the cells or pores of the sponge. Mr. Hogg has watched the development of these bodies, for having placed some of them in a glass vessel, replenished daily with fresh water, six of them soon became attached to the bottom of the vessel, and in about three weeks each of them was found covered with a whitish woolly substance, which he took for the commencement of the sponge; but unfortunately their further progress was not observed, from the author being obliged to leave home.

Read also a paper, entitled, on the Number and Structure of the Mammulæ employed by Spiders in the process of Spinning. By John Blackwall, Esq., F.L.S.

The author observes that all the species which have come under his notice are provided with four, six, or eight spinning mammulæ, which are somewhat conical or cylindrical, and composed of one or more joints each: they are usually closely grouped in pairs, which may be readily distinguished from each other by their relative positions. The pair situated near the anus is called by the author superior spinners, and that furthest removed from it inferior spinners, and the mammulæ placed between these two extremes he terms intermediate spinners. Exceedingly fine, moveable papillæ or spinning tubes, for the most part dilated at the base, occur at the extremity of the mammulæ, or are disposed along the inferior surface of their terminal joint, whence issues the viscous secretion of which the silken lines produced by spiders are formed.

Mr. Saunders, F.L.S., presented specimens of *Potamogeton plantagineus* and *Medicago denticulata*, var. *apiculata*, gathered in Sussex.

[\* An abstract of Mr. Rigg's paper on the germination of seeds will be found in the Lond. and Edinb. Philosophical Magazine, vol. ix. p. 536: see also the same Journal, vol. xii. p. 31, 232.—EDIT.]